CLAIMS

What is claimed is:

1. A method for a path-sensitive branch registry for cyclic distributed transactions, the method comprising:

identifying a superior node as a root;

sending an outbound flow to a plurality of subordinate nodes;

linking an inbound flow with a branch qualifier and global transaction identification;

receiving said inbound flow from said superior node into a transaction manager of each said subordinate node;

sending confirmation from each said subordinate node of a subordinate relational status to said superior node;

recognizing said inbound flow and said outbound flow of branch instructions by said superior node; and

updating a node registry of a superior-subordinate relationship based on said inbound flow and said outbound flow.

2. The method in claim 1 wherein said superior node contains a transaction manager, a branch qualifier and a global tree identification.

3. The method in claim 1 wherein said inbound flow and said outbound flow include syncpoint cues.

4. The method in claim 3 wherein said transaction manager sends said syncpoint cues to subordinate nodes.

5. The method in claim 1 wherein said plurality of subordinate nodes each contain a transaction manager.

6. The method in claim 2 wherein said transaction manager of said superior node links said syncpoint cues with said branch qualifier and said global transaction identification.

7. The method in claim 1 wherein said transaction manager of each said subordinate node receives syncpoint cues from said superior node and sends confirmation to said superior node of said subordinate relational status.

8. The method in claim 7 wherein said superior node and said subordinate node recognize relational status based on said syncpoint cues linked with said branch qualifier and said global transaction identification; wherein said branch qualifier is established and unique for the life of the transaction.

9. The method in claim 7 wherein said subordinate relational status is updated based on the flow of said syncpoint cues.

10. A system utilizing a path-sensitive branch registry for cyclic distributed transactions, the system comprising:

a plurality of nodes in a distribution tree;

a superior node identified as the root;

a plurality of subordinate nodes that receive an inbound flow from a superior node;

said superior nodes and said subordinate nodes each include transaction managers for managing a node's registry and updating said registry in response to said inbound flow;

a plurality of said transaction managers that compare said inbound flow against the said node's registry;

a plurality of said registries that contain an identifier that is updated by said transaction managers.

11. The system of claim 10 wherein said inbound flow includes syncpoint cues.

12. The system of claim 10 wherein said registry contains addresses of syncpoint cues.

13. The system of claim 12 wherein said transaction managers compare said inbound flow against said registry addresses.

14. The system of claim 13 wherein said inbound flow contains identifiers including a branch qualifier and a global transaction identity.

15. The system of claim 14 wherein said identifiers are incremented.

16. A method for managing a distributed transaction comprising one or more transaction flows between respective pairs of nodes in a network of interconnected nodes, each of said transaction flows being accompanied by an originating node identifier identifying the originating node, said method being performed by one of said nodes as a local node and comprising the steps of:

maintaining a registry comprising zero or more entries corresponding to inbound flows from other nodes, each of said entries containing the originating node identifier accompanying the corresponding inbound flow and a local node idenitifier identifying the local node, said local node identifier being used to identify the local node in outbound transaction flows to other nodes resulting from said inbound flow;

upon receiving an inbound flow from another node, determining whether there is an entry in said registry for the originating node identifier accompanying said inbound flow;

if there is no entry for said originating node identifier and there is no entry for another inbound flow for the same transaction, creating an entry in said registry containing said originating node identifier and a local node identifier identifying the local node; and

if there is no entry for said originating node identifier and there is an entry for another inbound flow for the same transaction, creating an entry in said registry containing the originating node identifier accompanying said inbound flow and a local node qualifier identifying the local node that is different from any other local node identifier in said registry for that transaction.

17. The method of claim 16 in which said local node identifier contains an index portion that is incremented from a previous value if there is no entry for said originating node identifier and there is an entry for another inbound flow for the same transaction.

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